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CLAIM AMENDMENTS

This listing of the claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) A method of identifying a device comprising:
receiving a request to establish a Point to Point Protocol over Ethernet (PPPoE) session
on behalf of a Local Area Network (LAN) side device;
~~outputting~~ outputting a PPPoE discovery stage packet that comprises a tag identifying
the LAN side device;
receiving a different request to establish a different PPPoE session on behalf of a
different LAN side device; ~~and~~
outputting a different PPPoE discovery stage packet that comprises a different tag
identifying the different LAN side device;
receiving an access concentrator packet responsive to the PPPoE discovery stage packet
the access concentrator packet comprising the tag;
recognizing the tag in the access concentrator packet; and
communicating the tag from the access concentrator packet to the LAN side device.
2. (Original) The method of claim 1, wherein the PPPoE discovery stage packet
comprises a PPPoE Active Discovery Initiation packet.
3. (Original) The method of claim 1, further comprising maintaining information
associating the LAN side device with the tag and the different LAN side device with the different
tag.
- 4-5 (Canceled).
6. (Currently Amended) The method of claim ~~[[4]]~~ 1, wherein the access concentrator
packet comprises a PPPoE Active Discovery Offer packet and comprises the tag in an
unmodified form.

7. (Original) The method of claim 1, wherein the tag complies with a Host-Uniq TAG construct described in IETF RFC 2516.

8. (Original) The method of claim 1, further comprising utilizing a PPPoE client executing at a node at least partially interconnecting a LAN to a wide area network node to generate the PPPoE discovery stage packet.

9. (Original) The method of claim 1, further comprising:
enabling a Point to Point Protocol (PPP) session for the LAN side device; and
enabling a different Point to Point Protocol (PPP) session for the different LAN side device.

10. (Original) The method of claim 9, further comprising disabling a Network Address Translation feature in connection with the PPP session.

11. (Original) The method of claim 1, further comprising receiving the request via a connection type selected from the group consisting of an Ethernet Link, an 802.11(x) link, a Bluetooth link, a Universal Serial Bus Link, and a powerline networking link.

12. (Original) The method of claim 1, further comprising utilizing a modem device to output the PPPoE discovery stage packet, wherein the modem device is selected from the group consisting of an xDSL modem, a cable modem, a fixed wireless modem and a satellite modem.

13. (Currently amended) The method of claim ~~[[1]]~~ 12, further comprising:
utilizing a the modem device to output the PPPoE discovery stage packet and the
different PPPoE discovery stage packet; and
communicatively coupling the modem device and a plurality of other modem devices to
an access concentrator node of a wide area network.

14. (Currently amended) A device identification system, comprising:
an access concentrator having a computing platform and an interface operable to facilitate a communicative coupling of a plurality of remote devices to the computing platform;
a second interface communicatively coupled to the computing platform and operable to facilitate an outputting of a collection of information representing a PPP session of a first of the plurality of remote devices and a different PPP session of a different one of the plurality of remote devices; and
a Local Area Network (LAN) engine communicatively coupled to the interface and configured to recognize an identification tag in a packet included in a discovery stage of the PPP session, the identification tag identifying a subscriber LAN device communicating the packet via the first of the plurality of remote devices, and
wherein the LAN engine is at least partially embodied by a processor accessing a computer-readable medium having computer-readable instructions and executing the computer-readable instructions to recognize an existence of the tag, to identify device identification information contained in the tag, and to update a memory associated with a Broadband Remote Access Server to acknowledge the device identification information.
15. (Original) The system of claim 14, wherein the tag complies with a Host-Uniq TAG construct described in IETF RFC 2516.
16. (Canceled).
17. (Original) The system of claim 14, further comprising the first of the plurality of remote devices, wherein the first of the plurality of remote devices comprises an xDSL modem.
18. (Original) The system of claim 14, wherein the access concentrator comprises a cable modem termination system.

19. (Original) The system of claim 14, wherein the access concentrator comprises a digital subscriber line access multiplexer.

20. (Currently Amended) The system of claim 14, ~~further comprising a~~ wherein the Broadband Remote Access Server is communicatively coupled to the LAN engine and operable to maintain information representing the subscriber LAN device.

21. (Currently amended) The method of identifying remote devices, comprising:
receiving a PPPoE packet from a remote node;
recognizing that the PPPoE packet comprises a tag including information associated with
a device communicating via the remote node;
receiving another PPPoE packet from the remote node; and
recognizing that the other PPPoE packet comprises a different tag including other
information associated with a different device communicating via the remote
node; and
providing a broadband link at least partially interconnecting a communication network
node and the remote node.

22. (Original) The method of claim 21, further comprising:
associating the remote node with a subscriber; and
maintaining subscriber information comprising an identification of the device and the
different device.

23. (Canceled).

24. (Original) The method of claim 21, wherein the PPPoE packet comprises a PPPoE
Active Discovery Initiation (PADI) packet.

25. (Currently amended) The method of claim ~~[[21]]~~ 22, further comprising:
~~providing a broadband link at least partially interconnecting a communication network~~
~~node and the remote node;~~
~~associating the remote node with a subscriber;~~
~~maintaining subscriber information comprising an identification of the device and the~~
~~different device; and~~
altering a cost of using the broadband link in response to recognizing an additional device
communicating with the communication network node via the remote node.

26. (Currently amended) The method of claim ~~[[21]]~~ 22, further comprising:
~~providing a broadband link at least partially interconnecting a communication network~~
~~node and the remote node;~~
~~associating the remote node with a subscriber;~~
~~maintaining subscriber information comprising an identification of the device and the~~
~~different device; and~~
considering the subscriber information in connection with generating a marketing offer
presentable to the subscriber.

27. (Currently amended) The method of claim ~~[[21]]~~ 22, further comprising:
~~providing a broadband link at least partially interconnecting a communication network~~
~~node and the remote node;~~
~~associating the remote node with a subscriber;~~
~~maintain subscriber information comprising an identification of the device and the~~
~~different device; and~~
considering the subscriber information in connection with making a communication
network planning decision.

28. (Currently Amended) The method of claim ~~[[21]]~~ 22, further comprising:
~~providing a broadband link at least partially interconnecting a communication network~~
~~node and the remote node;~~
~~associating the remote node with a subscriber;~~
~~maintaining subscriber information comprising identification of the device and the~~
~~different device;~~
receiving a trouble-shooting request from the subscriber; and
considering the subscriber information in connection with offering a suggestion
responsive to the trouble-shooting request.
29. (Original) The method of claim 21, wherein the communication network node
comprises a Broadband Remote Access Server.
30. (Original) The method of claim 21, wherein the device is selected from a group
consisting of a computer, a wireless access point, a Universal Serial Bus Device, a Voice over
Internet Protocol Telephone, a Television, a Set-top Box, a refrigerator, a washing machine, and
a home networking device.
31. (Original) The method of claim 21, wherein the tag comprises a sixteen bit tag
32. (Original) The method of claim 21, wherein the tag comprises with a Host-Uniq TAG
construct described in IETF RFC 2516.